

CLAIMS

What is claimed is:

1. A method for switching from a reserved first path between a source node and a destination node, the reserved first path comprising one or more interconnected nodes,
5 to a reserved second path comprising one or more interconnected nodes comprising the steps of:
enabling the second path for data transfer between the source node and destination node; and
disabling the first path for data transfer between the source node and the
10 destination node after enabling the second path for data transfer.
2. A method as claimed in Claim 1 wherein the step of enabling further comprises:
determining the nodes and links shared by the second path and the first path; and
reserving resources in the second path not shared with the first path.
3. A method as claimed in Claim 3 wherein the step of determining further comprises:
15 comparing a path identification field value and a tunnel session identification field value in a path message for the second path with the path identification field value and the tunnel session identification field value in the reserve message for the first path.
4. A method as claimed in Claim 1 wherein the step of reserving further comprises:
20 sending a path message for the second path to the destination node; and
sending a reserve message for the second path to the source node in response to the path message sent to the destination node.
5. A method as claimed in Claim 1 wherein the step of disabling further comprises:

releasing resources in the first path not shared with the second path.

6. A method as claimed in Claim 5 wherein the step of releasing further comprises:
 sending a request release message for the first path by the source node to the destination node.

- 5 7. A method as claimed in Claim 1 wherein the step of enabling in an intermediate node comprises the steps of:

receiving a path message from an upstream node;

sharing resources with the first path dependent on a tunnel session and tunnel path identification in the path message; and

- 10 forwarding the path message to a downstream node.

8. A method as claimed in Claim 1 wherein the step of disabling in an intermediate node comprises the steps of:

receiving a path tear message from an upstream node;

releasing resources for the first path dependent on a tunnel session identification

- 15 and tunnel path identification in the path message; and

forwarding the path tear message to a downstream node.

9. An apparatus for switching from a reserved first path between a source node and a destination node, the reserved first path comprising one or more interconnected nodes, to a reserved second path comprising one or more interconnected nodes comprising:

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20 a path switch routine;

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means, within the path switch routine, for enabling the second path for data transfer between the source node and the destination node; and

means, within the path switch routine, for disabling the first path for data transfer between the source node and the destination node after the second path is enabled for data transfer.

10. An apparatus as claimed in Claim 9 wherein the means for enabling further  
5 comprises:

means, within the path switch routine, for determining the nodes and links shared by the second path and the first path; and

means, within the path switch routine, for reserving resources in the second path not shared with the first path.

10 11. An apparatus as claimed in Claim 10 wherein the means for determining further comprises:

means, within the path switch routine, for comparing a path identification field value and a tunnel session identification field value in a path message for the second path with the path identification field value and the tunnel session identification field  
15 value in the path message for the first path.

12. An apparatus as claimed in Claim 10 wherein the means for reserving further comprises:

means, within the path switch routine, for sending a path message for the second  
20 path by the source node to the destination node; and

means, within the path switch routine, for sending a reserve message for the second path by the destination node to the source node after the destination node has received the path message.

13. An apparatus as claimed in Claim 9 wherein the means for disabling further  
25 comprises:

means, within the path switch routine, for releasing resources in the first path not shared with the second path.

14. An apparatus as claimed in Claim 13 wherein the means for releasing further comprises:

5 means, within the path switch routine, for sending a release message for the first path by the source node to the destination node.

15. An apparatus for switching from a reserved first path between a source node and a destination node, the reserved first path comprising one or more interconnected nodes,  
10 to a reserved second path comprising one or more interconnected nodes comprising:  
a path switch routine responsive to a request for switching from the first path to the second path, the path switch routine further comprising:

an enable routine which enables the second path for data transfer between the source node and the destination node; and

15 a disable routine which disables the first path for data transfer between the source node and the destination node after the enable routine has enabled the second path for data transfer.

16. An apparatus as claimed in Claim 15 wherein the enable routine further comprises:

20 a shared node detection routine which determines the nodes and links shared by the second path and the first path; and

a reserve resources routine which reserves resources in the second path not shared with the first path.

17. An apparatus as claimed in Claim 16 wherein the shared node detection routine further comprises:

a compare routine which compares a path identification field value and a tunnel session identification field value in a path message for the second path with the path identification field value and the tunnel session identification field value in the path message for the first path.

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18. An apparatus as claimed in Claim 16 wherein the reserve resources routine further comprises:

a path message routine which sends a path message for the second path from the source node to the destination node; and

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a reserve message routine which sends a reserve message for the second path from the destination node to the source node in response to the path message sent by the request path message routine.

19. An apparatus as claimed in Claim 18 wherein the path message comprises:

a session identification identifying a tunnel; and

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a tunnel path identification identifying a tunnel path for the tunnel.

20. An apparatus as claimed in Claim 19 wherein the disabling routine further comprises:

a release resources routine which releases resources in the first path not shared with the second path.

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21. An apparatus as claimed in Claim 15 wherein the release resources routine further comprises:

a request release message routine which sends a release message for the first path to the destination node.

22. An apparatus as claimed in Claim 15 wherein the enable routine in the intermediate node comprises:

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a path message receive routine for receiving a path message from an upstream
node;

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5           a session-path routine for sharing resources with the first path dependent on a  
tunnel session and tunnel path identification in the path message; and

a path message forward routine for forwarding the path message to a downstream node.

23. A method as claimed in Claim 15 wherein the disable routine in an intermediate  
10 node comprises:

a receive path tear message routine for receiving a path tear message from an upstream node;

a release resources routine for releasing resources for the first path dependent on a tunnel session identification and tunnel path identification in the path message; and

15           a forward path tear message routine for forwarding the path tear message to a downstream node.

24. A computer program product for switching from a reserved first path between a source node and a destination node, the reserved first path comprising one or more interconnected nodes, to a reserved second path comprising one or more interconnected nodes, the computer program product comprising a computer usable medium having  
20 computer readable code thereon, including program code which:

enables the second path for data transfer between the source node and destination node; and

disables the first path for data transfer between the source node and the  
25 destination node after enabling the second path for data transfer.